

**Listing of the Claims:**

The following is a complete listing of all the claims in the application, with an indication of the status of each:

Claims 1-11. Canceled

12. (New) A sensor, comprising:

a transmitting antenna array which transmits radiation signals in both a main radiation area and a secondary radiation area, where the main radiation area and secondary radiation area are angularly offset relative to each other; and

a receiving antenna array which receives reception signals from both said main radiation area and said secondary radiation area, said reception signals being reflected from objects which may be present in either said main reception area or said secondary reception area, said receiving antenna array and said transmitting antenna array are positioned in a same location,

wherein objects present in either said main radiation area or said secondary radiation area are sensed by said sensor.

13. (New) The sensor of claim 12 wherein said transmitting antenna array is a single squinting antenna.

14. (New) The sensor of claim 12 wherein said receiving antenna array is a single antenna.

15. (New) The sensor of claim 12 wherein said receiving antenna array includes at least two antennas one of which receives reception signals from said main radiation area, and the other of which receives signals from the secondary reception area.

16. (New) The sensor of claim 12 wherein said radiation signals transmitted by said transmitting antenna array in said main radiation area cover an area at least four times as large as said secondary radiation area.

17. (New) The sensor of claim 12 wherein said main radiation area is located behind a car and wherein said secondary radiation area is located beside said car.

18. (New). A sensor, comprising:

a planar transmitting antenna including a transmitting antenna array which has a plane surface in which antenna pads of said transmitting antenna array are located so as to establish an irradiation surface and which transmits radiation signals in both a main radiation area and a second radiation area, where the main radiation area and second radiation area are angularly offset relative to each other;

a receiving antenna array which receives reception signals from both said main radiation area and said second radiation area, said reception signals being reflected from objects which may be present in either said main radiation area or said second radiation area; and

a control means for tuning the transmitting array, wherein the transmitting antenna array is tuned through said control means so as to direct the main radiation area to an acute angle related to a perpendicular of said irradiation surface, thereby enhancing said second radiation area, and wherein objects present in either said main radiation area or said second radiation area are sensed by said sensor.

19. (New) The sensor of claim 18 wherein said main radiation area has a central axis and the second radiation area has a central axis, and wherein between the two central axes an angle of  $>45^\circ$  is included.

20. (New) The sensor of claim 19 wherein the angle is  $90^\circ$  or above.

21. (New) The sensor of claim 18 wherein the acute angle is approximately  $20^\circ$ .

22. (New) An object detection system for a vehicle, comprising:

a sensor positioned at a front or rear of a vehicle for detecting objects located in front of or behind said vehicle and to at least one side of said vehicle, said sensor including

a planar transmitting antenna including a transmitting antenna array

which has a plane surface in which antenna pads of said transmitting antenna array are located so as to establish an irradiation surface and which transmits radiation signals in both a main radiation area and a second radiation area, where the main radiation area and second radiation area are angularly offset relative to each other;

a receiving antenna array which receives reception signals from both said main radiation area and said second radiation area, said reception signals being reflected from objects which may be present in either said main radiation area or said second radiation area; and

a control means for tuning the transmitting array, wherein the transmitting antenna array is tuned through said control means so as to direct the main radiation area to an acute angle related to a perpendicular of said irradiation surface, thereby enhancing said second radiation area, and wherein objects present in either said main radiation area or said second radiation area are sensed by said sensor, and

wherein said sensor is mounted on said vehicle so that the acute angle of the main radiation area is compensated with respect to a longitudinal axis passing through a front and a rear of said vehicle.

23. (New) The object detection system of claim 22 wherein said main radiation area has a central axis and the second radiation area has a central axis, and wherein between the two central axes an angle of  $>45^\circ$  is included.

24. (New) The object detection system of claim 23 wherein the angle is  $90^\circ$  or above.

25. (New) The object detection system of claim 18 wherein the acute angle is approximately  $20^\circ$ .